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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,948	06/04/2002	Wolfgang Schmidbauer	WEI0032	2549

7590

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EXAMINER

HALPERN, MARK

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,948	SCHMIDBAUER ET AL.	
	Examiner	Art Unit	
	Mark Halpern	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/29/02</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

- 1) Applicant is reminded of the proper Content of Specification
 - (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
 - (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
 - (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
 - (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.
 - (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

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- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
 - (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.
- 2) The glass level gauge 7 on page 6, is also referred as feeder 7 on page 8 of the Specification.
 - 3) The stirring crucible 6 in the specification is also referred as a conditioning part 6 in claim 14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 4) Claims 1-20, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign

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document and are replete with grammatical and idiomatic errors. Also, Claims 6-15, and 20, are method claims; said claims may not depend from apparatus claims.

Claim 1 recites the limitation "the skull principle" in line 4. Claim 1 recites the limitation "the vessel" in line 8. Claim 1 recites the limitation "the floor zone" in line 11. Claim 2 recites the limitation "the floor" in line 3. Claim 6 in line 4, and Claim 20 in line 3 recite the limitation "the upper zone". Claim 7 recites the limitation "the melt level" in line 1. Claim 9 recites the limitation "the glass melt" in line 3. Claim 15 recites the limitation "the glasses" in line 2. There is insufficient antecedent basis for these limitations in the claims.

Claim 1 is not clear as to what is meant by the phrase "configured according to the skull principle". No discussion is provided in the specification.

Claim 1, line 12, and Claim 2, line 2, recite the term "the same"; the claims are not clear what object is being referred by the term "the same".

Claims 5, 17-19, are not clear as to what is "a conductive screening cage". No discussion is provided in the specification.

Claims 6 and 20 are not clear as to the phrase "the upper zone" and of which vessel reference is made.

Claim 6 is not clear as to the term "from below". The term is vague.

Claim 7 is not clear as to the term "in the manner of interconnecting pipes". The term is confusing since there are other pipes recited elsewhere in the claims.

Claim 9, line 2, the phrase "so-called" renders the claim indefinite.

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Claim 10 is not clear by the use of term "a heatable stone groove". The term is confusing since "a groove" is recited elsewhere and represents a different part of the apparatus.

Claim 13 is not clear which vessel is the recited "skull crucible"; the melting vessel or the refining vessel.

Claim 14 is not clear as to what is a "platinum conditioning part" or "a conditioning part made of ceramic material".

Claim 15, the phrase "the glasses to be refined" is not clear since glass melts are being refined, and therefore the glass melts should not contain the recited toxic agents.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5) Claims 1-3, 5, 9, 12, 14, 16-18, are rejected under 35 U.S.C. 102(b) as being anticipated Tachibana Masakiyo (JP 57 095 834).

Claims 1, 9, 12: Tachibana discloses an apparatus and a process wherein through inlet 3 starting material glass 9 is introduced into melting chamber 4. Said melting chamber 4 is connected to refining chamber 6 where glass melt 1 flows through a throat 5. The throat 5 connecting the chambers is located at the floor level of both melting chamber 4 and refining chamber 6. The throat 5 of Tachibana reads on the

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claimed connecting line. The chambers 4 and 6 are surrounded by high frequency voltage applied separately to coils 10A, 10B enclosing a melting container 2 from oscillators 11A, 11B. The Tachibana reference is silent on "the skull principle", however in view that the skull principle is not defined in the specification, the melting and the refining vessel of Tachibana are configured according to the claimed skull principle (Tachibana, Abstract and Figure).

Claim 2: as shown in the Figure, the throat 5 emerges laterally from the melting vessel at the floor area and enters the refining vessel at the floor area.

Claims 3, 16: as shown in the Figure, duct 7 exits downstream from the refining chamber for subsequent processing of the glass melt.

Claims 5, 17-18: the melting chamber 4 and the refining chamber 6 are surrounded by high frequency voltage applied separately to coils 10A, 10B enclosing a melting container 2 from oscillators 11A, 11B. The high frequency voltage separation of Tachibana reads on the claimed conductive screening caging (in the absence of a definition of conductive screening caging).

Claim 14: the glass is melted in chambers of Tachibana at temperatures about 1350-1500 °C (Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6) Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana. Tachibana is applied as above for claim 5, Tachibana is silent on using toxic refining agents, however, it would have been obvious to the artisan that the Tachibana process does not use toxic refining agents since none of such agents are disclosed.

7) Claims 4, 6-8, 10-11, 19-20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Murakami (6,250,111).

Claims 4, 6, 20: Tachibana is applied as above for claim 3; Tachibana is silent on a stirring crucible being located downstream of the cooling groove. Murakami discloses an apparatus and a process of melting and refining glass where a connector 10 connects melting tank 1 to refining tank 3 through homogenizing tank 4 to mixing tank 5; said mixing tank 5 is equipped with a stirrer 9 for stirring the molten glass (Murakami, col. 4, line 33 to col. 5, line 39 and Figure 2). It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Tachibana with Murakami, because such a combination would keep the molten glass of Tachibana at a uniformed temperature and prevent cords as disclosed by Murakami (col. 4, lines 40-45).

Claim 7: it would have been obvious, to one skilled in the art at the time the invention was made, that the melt levels of the connector 10 and the mixing tank 5 of Murakami be of the same level as the melt level of the melting and refining tanks of Tachibana, because it would optimize the process flow of the melting glass.

Claim 8: the melting tank of Murakami is made of platinum or platinum alloy (col. 3, lines 15-32).

Claim 10: the connector 10 of Murakami is made of platinum lining (col. 9, lines 20-24).

Claim 11: the refining tank of Murakami is glass lined (col.2, lines 55-65).
Tachibana, as per above, discloses heating of the refining vessel by high frequency voltage.

Claim 19: the melting chamber 4 and the refining chamber 6 of Tachibana are surrounded by high frequency voltage applied separately to coils 10A, 10B enclosing a melting container 2 from oscillators 11A, 11B. The high frequency voltage separation of Tachibana reads on the claimed conductive screening caging (in the absence of a definition of conductive screening caging).

8) Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Lifanov ("A Crucible-Type Induction Furnace for Melting Glass", US Consultants Bureau, vol. 48, no. 7, July 1991, pgs. 288-290). Tachibana is applied as above for claim 5; Tachibana is silent on the skull crucible being short-circuited in the floor zone. Lifanov discloses a skull crucible made of metal pipes, wherein said metal pipes are separated from each other by gaps and the pipes are short circuited in the floor zone by a collector that is supplying and discharging a coolant to said metal pipes. It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Tachibana and Lifanov, because such a combination would provide a means for efficient cooling of the crucible pipes of the design of Tachibana.

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Conclusion

9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halpern whose telephone number is 571-272-1190. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH

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